

### Patent claims

1. An instrument for implanting a cervical intervertebral prosthesis (1) which  
5 comprises two anchoring plates (11, 12) and a prosthesis core (10) arranged between them, with a handle (40), a stem (50), and a head part (60) which is arranged at an end remote from the handle (40) and whose dimensions are chosen such that it can be inserted into the space that has been created between adjacent vertebral bodies for receiving the intervertebral prosthesis (1), characterized in that the head part (60) has an excavating element (7, 8) for creating a recess in the cranial-caudal direction in the vertebral bodies, and an actuating device (40, 51, 52) is provided for the excavating element (7, 8) which is movable between a rest position, in which it is retracted in the head part (60), and a working position, in which it protrudes from the head part (60) transversely with respect to the stem (50).  
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2. The instrument as claimed in claim 1, characterized in that the excavating element is a cutter disk (7).  
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3. The instrument as claimed in claim 2, characterized in that the cutter disk (7) has at least one pair of cutting fins (71, 72) arranged in an offset manner about the circumference.
- 25 4. The instrument as claimed in claim 3, characterized in that the cutting fins (71, 72) have different heights.
5. The instrument as claimed in claim 3 or 4, characterized in that the cutting fins (71, 72) are arranged in pairs lying opposite one another.  
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6. The instrument as claimed in claim 1, characterized in that the excavating element (8) is a drill (82).
7. The instrument as claimed in claim 6, characterized in that a pushing/screwing drive mechanism (85, 83, 84) is provided for actuating the drill (82).  
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8. The instrument as claimed in claim 6 or 7, characterized in that at least two drills (82) are arranged transversely with respect to the stem (50).
- 5 9. The instrument as claimed in one of claims 6 through 8, characterized in that the excavating element (8) has a spherical cutter section.
- 10 10. The instrument as claimed in one of claims 1 through 9, characterized in that the excavating element (8) is longitudinally movable along a guide (84).
11. The instrument as claimed in one of claims 1 through 10, characterized in that the actuating element has a handle (40) and a transmission shaft (51).
- 15 12. The instrument as claimed in one of claims 1 through 11, characterized in that the actuating element has a rotary drive coupling.
- 20 13. A cervical intervertebral prosthesis comprising a lower anchoring plate and an upper anchoring plate (11, 12) which are each designed with an anchoring plate surface for bearing on an adjacent vertebral body, and comprising a prosthesis core (10) which is arranged between these and which creates an articulated connection between the anchoring plates (11, 12), characterized in that at least one of the two anchoring plate surfaces (11, 12) comprises a rib-like projection (18) for form-fit engagement in the vertebral body transverse to the AP direction.
- 25 14. The cervical intervertebral prosthesis as claimed in claim 13, characterized in that the projection (18) is arranged outside an edge area of the anchoring plate surface (11, 12).
- 30 15. The cervical intervertebral prosthesis as claimed in claim 14, characterized in that the projection is offset from the center in the posterior direction, preferably in an area between 3/5 and 3/4 of the extent in the AP direction.
- 35 16. The cervical intervertebral prosthesis as claimed in one of claims 13 through 15, characterized in that the projection (18) has a height of 0.3 to

5.0 mm, preferably 1.0 to 3.0 mm, above the level of the anchoring plate surface (11, 12).

- 5 17. The cervical intervertebral prosthesis as claimed in one of claims 13 through 16, characterized in that the projection (18) is a sphere section.
- 10 18. The cervical intervertebral prosthesis as claimed in one of claims 13 through 17, characterized in that the projection (18) is divided into two or more segments (18') with a gap lying between them.
19. The cervical intervertebral prosthesis as claimed in claim 18, characterized in that the segments (18') are like bolts.
- 15 20. A method for implanting a cervical intervertebral prosthesis (1) with two cover plates (11, 12) and with a prosthesis core (10) arranged between them, said method comprising the steps of:
- a) spreading (91) two adjacent vertebral bodies apart,
- 20 b) working (94) the end faces of the vertebral bodies in order to create a seat for the cover plates (11, 12),
- c) using an instrument (2) with a head part (60) and with an excavating element (7, 8) which can emerge from the latter in the cranial-caudal direction and is used to create a recess in the cranial-caudal direction in at least one end face,
- 25 d) removing the instrument (2) and inserting the intervertebral prosthesis (1) which, on at least one surface of the cover plates (11, 12) directed toward the vertebral body, has a projection (18) engaging in the recess.
- 30 21. The method as claimed in claim 20, characterized by use of the instrument as claimed in one of claims 1 through 12.
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22. The method as claimed in claim 20 or 21, characterized by use of the intervertebral prosthesis as claimed in one of claims 13 through 19.